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February 16, 2007

Via Electronic Filing

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: WT Docket Nos. 96-86, 06-150 and 06-169 and PS Docket No. 06-229
Ex Parte Notice

Dear Ms. Dortch:

On February 15, 2007, Dr. Stagg Newman, Andrew Rein and the undersigned on behalf of Access Spectrum, LLC, met with Dana Shaffer, Jeffrey Cohen, John Evanoff, and Herbert Zeiler of the Public Safety & Homeland Security Bureau, along with Evan Kwerel and John Williams of the Office of Strategic Planning and Policy Analysis. Access Spectrum discussed how adoption of the Broadband Optimization Plan ("BOP") would facilitate the public-private partnerships that are the focus of the *Ninth NPRM*,[1] and explained why the 6+6 plan is inferior to the BOP. Discussions were consistent with the attached presentation and letter.

Also on February 15, 2007, Dr. Stagg Newman, Andrew Rein and the undersigned on behalf of Access Spectrum, LLC, and Paul Kolodzy on behalf of Pegasus Communications Corporation, met with Julius Knapp, Ronald Repasi, Alan Stillwell, Geraldine Matise, Ronald Chase, Ahmed Lahjouji, and Salomon Satche of the Office of Engineering and Technology.

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[1] *Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band; Development of Operational, Technical, and Spectrum Requirements for Meeting Federal, State, and Local Public Safety Communications Requirements Through the Year 2010*, PS Docket No. 06-229 and WT Docket No. 96-86, Ninth Notice of Proposed Rulemaking, 21 FCC Rcd 14837 (2006) (FCC 06-181) ("*Ninth NPRM*").

Access Spectrum and Pegasus discussed the Second Report of the 700 MHz Technical Working Group[2] and provided copies of the attached presentation and letter.

Pursuant to the Commission's rules, this letter is being submitted for inclusion in the public record in the above-referenced proceedings.

Sincerely,

/s/ Ruth Milkman
Ruth Milkman

Attachments

cc: Ronald Chase
Jeffrey Cohen
John Evanoff
Julius Knapp
Evan Kwerel
Ahmed Lahjouji
Geraldine Matise
Ronald Repasi
Salomon Satche
Dana Shaffer
Alan Stillwell
John Williams
Herbert Zeiler

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[2] Second Report of the 700 MHz Technical Working Group, transmitted by letter from Ruth Milkman, Counsel to Access Spectrum, LLC, and Kathleen Wallman, Adviser to Pegasus Communications Corp., WT Docket Nos. 96-86 & 06-169 (Jan. 26, 2007).

Optimizing the Upper 700 MHz Band for Public-Private Partnerships

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February 2007

Introduction

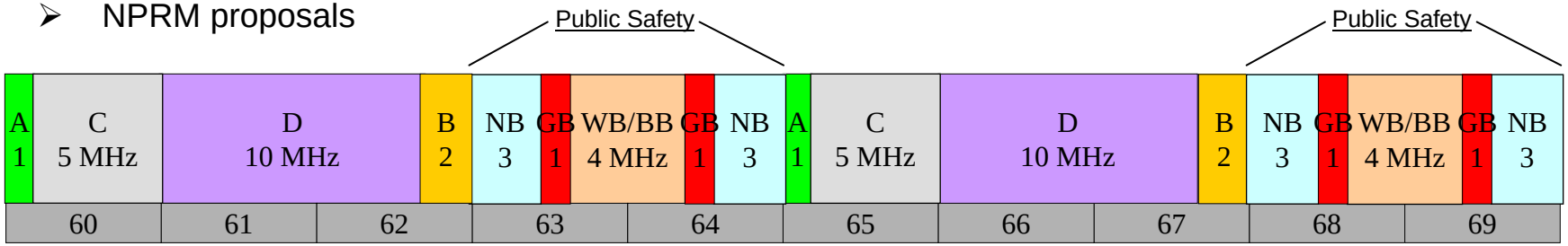
- In order for public-private partnerships to be successful, technical impediments to these partnerships must be removed and commercial/public safety incentives must be properly aligned
  - Public safety's broadband deployments must be "commercial-like"
    - Utilize a cellular-like network architecture
    - Unique requirements achieved through customized or "hardened" commercial-off-the-shelf technology
  - Band plan and auction rules must be designed to encourage public-private partnerships
    - Harmonized commercial/public safety allocations will encourage similar technology choice
    - Utilizing a thoughtful bidding structure will increase the likelihood that one or more commercial networks are deployed promptly

- The Broadband Optimization Plan resolves the technical impediments, has broad support from both the public safety community and commercial entities and has encountered virtually no opposition
  - The Broadband Optimization Plan should therefore be adopted immediately

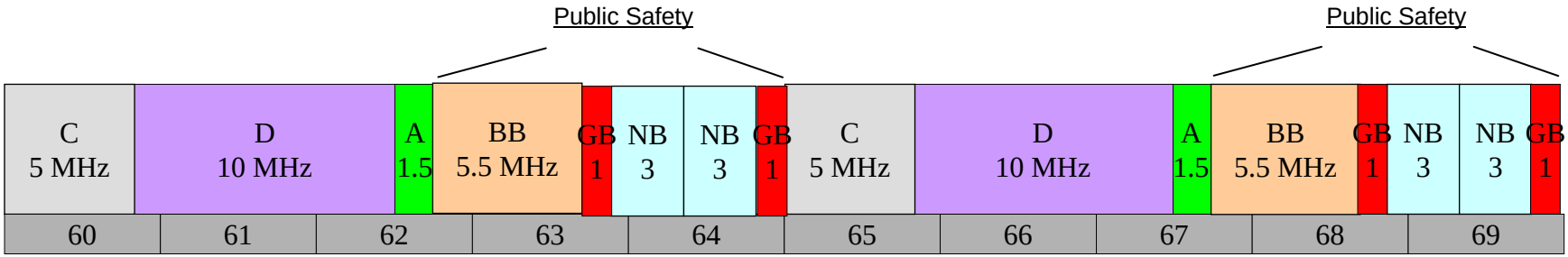
- The Commercial 700 MHz Plan capitalizes on the Broadband Optimization Plan by creating an environment for public-private partnerships to be successful, including harmonization of the commercial and public safety broadband spectrum
  - The Commercial 700 MHz Plan should be given careful consideration

Re-configuring the public safety allocation

- NPRM proposals



- The Broadband Optimization Plan ("BOP")



- Consolidates public safety's narrowband spectrum, thereby improving the interference protection for public safety's narrowband while "liberating" public safety's broadband allocation
- Places the public safety broadband allocation directly adjacent to commercial broadband spectrum, thereby significantly enhancing the prospects for viable public-private partnerships
- Contributes an additional 3 MHz of spectrum to public safety, thereby substantially increasing its broadband capacity and permitting the use of all major wireless broadband technologies

The Second TWG Report

- Under the BOP, public safety operations receive better interference protection
  - *"Under the BOP, commercial broadband operations will be 6.5 MHz away from the lower edge of public safety narrowband channels, which is 4.5 MHz greater separation than the current rules. This separation will greatly reduce the risk of interference to public safety narrowband operations, including in near-far scenarios." (pg. 5)*
  - *"At the upper edge of the public safety allocation, the BOP maintains the current 1 MHz of separation between the public safety narrowband and commercial operations and places that 1 MHz within public safety's control, which further reduces the risk of interference to public safety narrowband operations." (pg. 5)*
  - *"The TWG has performed a substantial amount of analysis to determine whether the BOP would increase the risk to public safety of harmful intermodulation interference from commercial operations… the TWG concluded that implementation of the BOP would have a net decreasing effect on the risk of intermodulation interference to public safety narrowband operations." (pg. 7)*

- The BOP harmonizes the technical rules for the entire commercial allocation
  - *"The TWG recognizes that a central feature of the BOP is the elimination of separately regulated commercial guard bands and the adoption of commercial rules from the existing C&D Blocks for the new A Block" (pg. 2)*
  - *"The BOP includes the harmonization of the technical rules in the Upper 700 MHz commercial spectrum, including extending current C&D Block out-of-band emissions rules, power and antenna height rules, and coordination rules to all of the Upper 700 MHz commercial spectrum. It also includes eliminating the application of adjacent channel power rules and cellular architecture prohibition rules to any Upper 700 MHz commercial spectrum." (pg. 2)*

The Second TWG Report (cont'd)

- Current and future commercial operations are protected from any interference from public safety operations, thus eliminating any need for a commercial guard band
  - *"As described in the TWG's first report, the TWG concluded that public safety wideband and narrowband operations should be permitted only in the spectrum from 764 - 775 and 794 -805 MHz… in the spectrum added to the public safety allocation under the BOP (i.e., 762.5 - 764 MHz and 792.5 – 794 MHz), the TWG has concluded that public safety operations should receive the same protection from OOBE interference from CMRS operations in the C, D and new A blocks as would any CMRS operator." (pg. 4)*
  - *"Finally, as described above, the BOP would apply commercial cellular OOBE rules inside the lower 1.5 MHz paired of public safety spectrum (762.5 – 764 and 792.5 – 794 MHz), effectively placing 1.5 MHz separation between commercial broadband and any non-cellular public safety operations." (pg. 5)*

- There are no longer any technical impediments to immediate adoption of the BOP
  - *"The TWG concluded that there were no inherent technical impediments to implementing the BOP, including harmonizing the technical rules in the Upper 700 MHz commercial spectrum." (pg. 2)*

“Liberating” public safety’s broadband allocation is critical

- Consolidating public safety’s narrowband spectrum “liberates” public safety’s broadband allocation
  - Consolidation of public safety’s narrowband allocation allows for tighter filtering and alternative methods for reducing inter-modulation interference
    - If broadband is in the middle:
      - The risk of intermodulation interference between public safety broadband and public safety narrowband would make infrastructure-sharing very difficult
      - Instead, public safety would need to operate its networks with fewer, higher sites and at lower power, thus significantly reducing system performance, total capacity and access speed while increasing the cost
  - Creating direct adjacency between the commercial and public safety broadband allocations leads to considerable opportunities to partner
    - Under the broadband in-the-middle approach:
      - It will be difficult to build base stations and hand-sets that function in the commercial and public safety broadband segments with the narrowband allocation in between
      - Instead, public safety would likely need separate and distinct technology, thus eliminating public safety’s ability to use commercial infrastructure and enjoy the benefits from the commercial economies of scale

- The broadband in-the-middle approach would force the public safety community to choose between tolerating intermodulation interference into narrowband or deploying constrained broadband systems with expensive, specialized technology

Facilitating public-private partnerships

- Placing the public safety broadband allocation directly adjacent to commercial broadband spectrum will significantly enhance the prospects for viable public-private partnerships
  - Handset and base stations will be designed to cover the entire commercial and public safety broadband allocations without the need to account for the public safety narrowband allocation, thus enabling public safety to benefit from commercial economies of scale
  - Adjacent public safety and commercial operators will be able to deploy the same technology and by properly coordinating their system designs, increase capacity and performance by eliminating any “buffer spaces”

- The broadband-in-the-middle approach would force the public safety community to forego most of the benefits of public-private partnerships

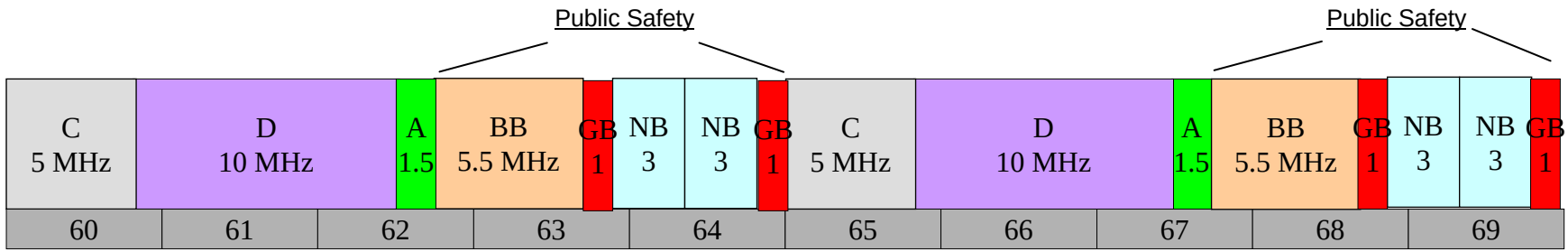
Maximizing technology choices

- Adopting the BOP will add 3 MHz of broadband spectrum to public safety's allocation and will permit the use of all major wireless broadband technologies
  - Public safety will increase its broadband capacity by almost 40%
    - If broadband is in the middle:
      - Rather than 5.5 MHz paired, public safety will have only 4 MHz paired for broadband
  - Public safety will have the opportunity to choose from the widest variety of potential wireless broadband technologies
    - Under the broadband in the middle approach:
      - Public safety will be forced to choose from technologies that exist in 1.25 MHz channel increments rather than ones that require at least a 5 MHz pair, thereby increasing the likelihood public safety and commercial operators choose different technologies

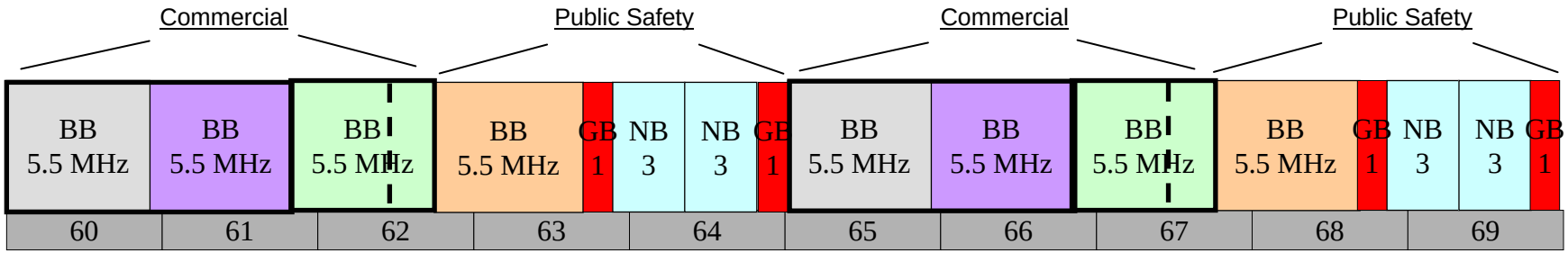
- The broadband in the middle approach will force the public safety community to deploy networks with substantially less capacity, will unnecessarily limit its choice of technologies and will further jeopardize the possibility of viable public-private partnerships

Reconfiguring the commercial allocation

- The Broadband Optimization Plan



- The Commercial 700 MHz Plan



- Re-organizes the 16.5 MHz of paired commercial spectrum into 5.5 MHz “building blocks”, thereby, harmonizing the commercial and public safety allocations and increasing the likelihood that there are multiple potential commercial partners for public-private partnerships
- Includes auction rules that encourage new entry, thereby increasing the likelihood that for 4G networks are deployed promptly

Public safety benefits

- Harmonizing the commercial and public safety allocations:
  - Enables the public safety community to benefit from commercial economies of scale
  - Encourages commercial operators and the public safety community to select the same technologies with the same profiles
  - Creates multiple commercial partners for public-private partnerships that provide meaningful benefits to the public safety community such as:
    - Preserving public safety's full control over its own exclusive spectrum
    - Enabling public safety to capitalize on where commercial operators would deploy under normal commercial conditions (i.e., 80-90% of the US population)
    - Ensuring that public safety deploys "commercial-like" systems that maximize system performance and capacity
    - Freeing up funds to "harden" and expand public safety's nationwide broadband network

- Adopting a band plan and auction rules that encourage substantial new entrants:
  - Makes it far more likely that expansive 700 MHz commercial deployments occur quickly

Conclusions

- The FCC should immediately adopt the Broadband Optimization Plan
  - In order for public-private partnerships to be successful, technical impediments to these partnerships must be removed
    - Responses to the 9th NPRM will be seriously impaired unless it is clear that public safety's non-narrowband allocation will be "liberated" by the Broadband Optimization Plan
  - Knowledge that it will be implemented, creating 33 MHz of fully functional commercial spectrum, is critical to enable consideration of the full range of alternatives with respect to the commercial allocation
    - Adopting the Broadband Optimization Plan does not eliminate any alternatives for the commercial allocation, including the status quo
  - The relevant proceedings are ripe for decision and the Broadband Optimization Plan has considerable support and virtually no opposition

- Serious consideration of the Commercial 700 MHz Plan is critical

- Prompt action on the Broadband Optimization Plan and prompt consideration of the Commercial 700 MHz Plan will:
  - Not delay the Congressionally-mandated auction
  - Permit adequate time for planning prior to the DTV transition

February 14, 2007

Via Electronic Filing

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: WT Docket Nos. 96-86 and 06-169
Written Ex Parte

Dear Ms. Dortch:

Alcatel-Lucent has recently conducted a series of *ex parte* meetings at the Commission during which it has advocated consolidation of the public safety 700 MHz narrowband spectrum and creation of a 6 MHz broadband-only block in the 700 MHz public safety allocation.[1] Alcatel-Lucent alleges that there is consensus in favor of a 6+6 700 MHz public safety band plan.[2] The record does not support this contention. While there is indeed broad consensus in the record in support of the immediate adoption of the Broadband Optimization Plan ("BOP"), there is little to no support in the record in favor of adoption of the 6+6 700 MHz public safety band plan set forth by Alcatel-Lucent, and no public safety entity has supported the 6+6 plan. The purpose of this letter is to ensure that the Commission is aware of this fact, and to set forth the major differences that separate the BOP, which is supported by the public safety community, from the 6+6 band plan described by Alcatel-Lucent, which has received no support from public safety.

The assertion by Alcatel-Lucent that there is consensus in favor of a 6+6 band plan may be inadvertent as Alcatel-Lucent has not opposed the BOP on its merits, and the 6+6 band plan is not central to Alcatel-Lucent's primary argument that public safety should be limited to broadband in the non-narrowband allocation. However, while it is true that the 6+6 band plan and the Broadband Optimization Plan ("BOP") both would consolidate the public safety narrowband spectrum, there are major differences between the two plans and the disparity in levels of support for the two plans reflects those differences. There is broad support for the

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1 *See, e.g.*, Letter to Marlene H. Dortch, Secretary, Federal Communications Commission, from Michael McMenamin, Global Government & Public Affairs, Alcatel-Lucent, WT Docket Nos. 96-86 and 06-169 (Jan. 26, 2007). Alcatel-Lucent also has sought the Commission's specification of 1.25 MHz as a basic broadband channel size within the 700 MHz Public Safety spectrum.

2 *See id.* at 1.

BOP, initially proposed by Access Spectrum, Columbia Capital, Pegasus Communications and Intel Corporation in WT Docket No. 96-86. In particular, the public safety community overwhelmingly supports the BOP, as do a number of significant commercial entities.[3] By contrast, Alcatel-Lucent appears to be one of the few advocates, if not the sole advocate, for a 6+6 band plan, and no public safety entity has supported the 6+6 plan.

More specifically, the BOP (as shown in Attachment A):

- Includes an additional 3 MHz of spectrum nationwide for the public safety community;
- Enables Public Safety to manage its own guard bands;
- Places public safety broadband operations directly adjacent to the commercial broadband operations, thereby promoting public-private partnerships;
- Resolves the Canadian border, equipment reprogramming, and spectrum planning database issues that the public safety community insisted must be resolved before public safety could support consolidation of the narrowband allocation;[4]

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[3] In addition to the BOP's original proponents, the entities supporting the Broadband Optimization Plan include: the National Public Safety Telecommunications Coalition (the members of which are the American Association of State Highway Transportation Officials, American Radio Relay League, American Red Cross, Association of Public-Safety Communications Officials-International, Association of Fish & Wildlife Agencies, Forestry Conservation Communications Association, International Association of Chiefs of Police, International Association of Emergency Managers, International Association of Fire Chiefs, International Municipal Signal Association, National Association of State Emergency Medical Services Officials, National Association of State Foresters, National Association of State Telecommunications Directors), Major Cities Chiefs Association, Major County Sheriffs Association, the National Sheriffs Association, the New York State Office for Technology, Motorola (supports a slightly modified version of the BOP), Northrop Grumman, Arcadian Networks, the WiMAX Forum and the following 700 MHz Regional Planning Committees: Region 4 (Arkansas), Region 5 (Southern California), Region 7 (Colorado), Region 8 (Metropolitan New York City Area), Region 9 (Florida), Region 10 (Georgia), Region 11 (Hawaii), Region 13 (Illinois except Southern Lake Michigan counties), Region 14 (Indiana except Southern Lake Michigan counties), Region 17 (Kentucky), Region 24 (Missouri), Region 26 (Nebraska), Region 30 (New York - Albany area), Region 32 (North Dakota), Region 33 (Ohio), Region 35 (Oregon), Region 39 (Tennessee), Region 45 (Wisconsin except Southern Lake Michigan counties), Region 54 (Chicago – Southern Lake Michigan counties) and Region 55 (New York – Buffalo).

[4] *See, e.g.,* Comments of the National Public Safety Telecommunications Council, WT Docket Nos. 06-169 and 96-86, at 7 (Oct. 23, 2006). The first Report of the 700 MHz Technical Working Group, transmitted via letter from Ruth Milkman, Counsel for Access Spectrum, LLC and Kathleen Wallman, Adviser to Pegasus Communications Corp., WT Docket Nos. 06-169 and 96-86 (Oct. 23, 2006) ("First Report of the 700 MHz Technical Working Group"), addressed

- Has undergone a thorough technical review resulting in the conclusion that there are no technical issues remaining that would prevent adoption of the BOP by the FCC,[5] clearing the way for immediate adoption of the BOP and enabling Public Safety's deployment of broadband technologies; and
- Results in an additional 3 MHz of spectrum nationwide for commercial broadband use (a 10% increase in capacity) and reduces the amount of spectrum dedicated to "guard bands," and therefore under-utilized, from 10 MHz to 3 MHz.

By contrast, the 6+6 band plan (as shown in Attachment A):

- Does not include any additional spectrum for Public Safety, and would result in less spectrum available for public safety broadband, since a portion of the 6 MHz would have to be used for an internal guard band;
- Continues to use commercial guard bands to protect public safety operations;
- Places a commercial guard band between the public safety broadband allocation and the adjacent commercial allocation, thereby making public-private partnerships far more difficult;
- Fails to address the Canadian border, equipment reprogramming and spectrum planning database issues identified by the public safety community, although

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the issue related to the Canadian border agreement. The BOP permits U.S. public safety narrowband operations to deploy in a way that would comply with both the current band plan and the future band plan, while allowing use of the new public safety broadband configuration nationwide, because the BOP leaves 1 MHz of paired narrowband spectrum in television Channels 63 and 68 (769-770 and 799-800 MHz). *See* First Report of the 700 MHz Technical Working Group at 10-12. The BOP would add 3 MHz of spectrum to the public safety allocation, and that 3 MHz plays a critical role in ensuring the U.S./Canada allocation "splits" can be maintained. The additional 3 MHz also enables border states and regions to incorporate broadband into both their short-term and long-term plans, despite the fact that in certain regions, the United States public safety entities have priority on only about 30% of the spectrum, under the U.S.-Canada agreement. In upper New York State, for example, Canada has priority on about 70% of the spectrum. For these reasons, in addition to the general benefits that the BOP provides, New York State, which is in the midst of deploying a comprehensive system, strongly supports the BOP. Access Spectrum and Pegasus solved the reprogramming and spectrum planning database (CAPRAD) issues by committing to fund the expenses related to converting existing 700 MHz narrowband systems and updating CAPRAD, contingent on the adoption of the BOP. *See* Comments of Access Spectrum, LLC and Pegasus Communications Corporation, WT Docket Nos. 06-169 and 96-86, at 16-17 (Oct. 23, 2006).

[5] *See* Second Report of the 700 MHz Technical Working Group, transmitted via letter from Ruth Milkman, Counsel for Access Spectrum, LLC and Kathleen Wallman, Adviser to Pegasus Communications Corp., WT Docket Nos. 06-169 and 96-86 (Jan. 26, 2007) ("Second Report of the 700 MHz Technical Working Group").

resolution of these issues is a pre-condition of public safety support for the consolidation of the narrowband allocation;[6]

- Has undergone no technical review whatsoever, which is unsurprising, given that there is no support for the 6+6 plan from any public safety interests. Without such a technical review, it is impossible to know the effect of the 6+6 plan on previously-identified interference issues between public safety and commercial operations or what additional problems and difficulties are lurking in such a plan;[7] and
- Results in unnecessary use of spectrum for under-utilized guard bands, creating significant inefficiencies in highly valued spectrum.

Alcatel-Lucent's focus may be on its own proposal to limit public safety to deploying broadband (rather than wideband), but by over-simplifying the BOP in support of such an argument, Alcatel-Lucent has, perhaps inadvertently, misstated what the consensus supports. We hope this letter has made it clear to the Commission that there are major differences between the BOP and the 6+6 band plan described by Alcatel-Lucent. The strength of the BOP and the significant work conducted by the Technical Working Group have generated strong support in the record from the public safety community for its adoption. By contrast, the record is devoid of any such support for the 6+6 band plan.

With the filing of the Second Report of the Technical Working Group, all technical issues related to the BOP have been addressed. The Commission should adopt the BOP immediately.

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[6] The 6+6 plan, by placing the entire narrowband allocation in Channels 64 and 69, nullifies the opportunity to enable U.S. public safety narrowband operations to deploy in a way that would comply with both the current band plan and the future band plan while allowing use of the new public safety broadband configuration nationwide. Further, a 6+6 plan would not provide the additional spectrum that is critical for the broadband needs of certain border states and regions (*e.g.,* New York State). Finally, Access Spectrum and Pegasus are not willing to fund the system conversion or CAPRAD expenses related to the narrowband consolidation, nor relinquish their B Block licenses, unless the BOP is adopted in its entirety.

[7] The experience of the Technical Working Group is instructive in this case. When Access Spectrum and Pegasus originally proposed the BOP, it was clear that there were benefits to the adoption of the BOP. As the Technical Working Group delved into the details, it became apparent that inter-modulation interference was a more serious concern than previously had been understood. A significant amount of testing and simulations were conducted and the Technical Working Group concluded that the BOP actually improved the interference protection for public safety operations, particularly for narrowband operations. It is unknown how the inter-modulation situation would change under the 6+6 plan and it is unknowable without a rigorous technical evaluation. This underscores the importance of a thorough technical review.

Pursuant to the Commission's rules, this letter is being submitted for inclusion in the public record in the above-referenced proceeding.

Sincerely,

/s/ Ruth Milkman
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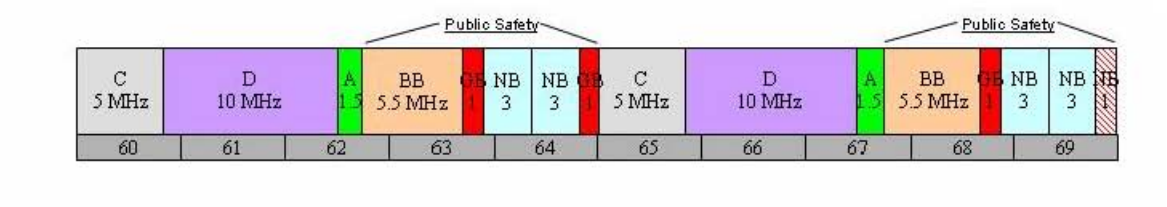
Roger Noel
Barry Ohlson
James Schlichting
Dana Shaffer
Michael Wilhelm

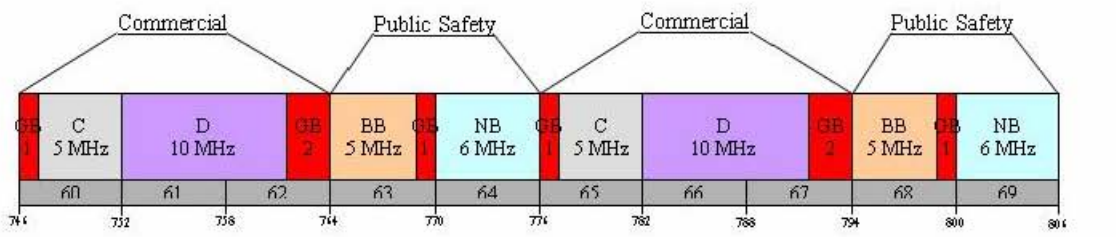
ATTACHMENT A

Broadband Optimization Plan (“BOP”)



BB=Broadband; WB=Wideband; NB=Narrowband; GB=Guard Band

“6+6” Plan



BB=Broadband; NB=Narrowband; GB=Guard Band